

# Claims

- [c1] 1. An optical scanner, comprising:  
a carrier having a connecting unit, wherein the carrier has an optical system mounted thereon;  
a casing having a guiding rail, wherein the guiding rail is formed on an interior wall of the casing as an integral unit and the guiding rail has at least a fastener for latching with the connecting unit of the carrier;  
a driving unit; and  
a transmission unit linking up the driving unit and the carrier,  
wherein the driving unit drives the transmission unit to pull the carrier to move along the guide rail through the connecting unit of the carrier and the fastener of the guide rail.
- [c2] 2. The optical scanner of claim 1, wherein the connecting unit of the carrier has at least a protruding section and the fastener of the guiding rail has a recess section for engaging with the protruding section of the connecting unit.
- [c3] 3. The optical scanner of claim 1, wherein the guiding rail is a section protruding from the interior wall of the

casing.

- [c4] 4. The optical scanner of claim 3, wherein the guiding rail has a U-shaped opening section having a plurality of ribs set at predetermined intervals inside the opening for connecting sidewalls of the opening and strengthening the casing and the guiding rail.
- [c5] 5. The optical scanner of claim 1, wherein the optical system further comprises a set of reflecting mirrors, a lens and an optical sensor.
- [c6] 6. The optical scanner of claim 5, wherein the optical sensor comprises a charge couple device.
- [c7] 7. The optical scanner of claim 1, wherein material constituting the casing comprises a soft and grind-resistant material.
- [c8] 8. The optical scanner of claim 7, wherein the soft and grind-resistant material is selected from a group consisting of polycarbonate resin, nylon, polyoxymethylene and polybutylene terephthalate.
- [c9] 9. An optical scanner, comprising:  
a carrier having a connecting unit, wherein the carrier has an optical system mounted thereon;  
a casing having at least two fixing sections on an interior

wall of the casing;

a guiding rail having at least two base fastening sections and at least a sliding fastener, wherein the base fastening sections of the guiding rail latch onto the respective fixing sections of the casing and the sliding fastener latches onto the connecting unit of the carrier;

a driving unit; and

a transmission unit linking up the driving unit and the carrier, wherein the driving unit drives the transmission unit to pull the carrier to move along the guide rail through the connecting unit of the carrier and the sliding fastener of the guide rail.

[c10] 10. The optical scanner of claim 9, wherein material constituting the casing comprises a soft and grind-resistant material.

[c11] 11. The optical scanner of claim 9, wherein the soft and grind-resistant material is selected from a group consisting of polycarbonate resin, nylon, polyoxymethylene and polybutylene terephthalate.

[c12] 12. The optical scanner of claim 9, wherein the guiding rail has a U-shaped opening section having a plurality of ribs set at predetermined intervals inside the opening for connecting sidewalls of the opening for strengthening the guiding rail.

- [c13] 13. The optical scanner of claim 9, wherein the connecting unit of the carrier has at least a protruding section and the sliding fastener of the guiding rail has a recess section for engaging with the protruding section of the connecting unit.
- [c14] 14. The optical scanner of claim 9, wherein the fixing section is a L-shaped extension from the casing and the sliding fastener of the guiding rail is an open hole such that the sliding fastener latches onto the fixing section to attach the guiding rail to the casing.
- [c15] 15. The optical scanner of claim 9, wherein the guiding rail is engaged to the interior wall of the casing.
- [c16] 16. The optical scanner of claim 9, wherein the optical system further comprises a set of reflecting mirrors, a lens and an optical sensor.
- [c17] 17. The optical scanner of claim 16, wherein the optical sensor comprises a charge couple device.